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ART. I. — *On the Strawberry.* By N. LONGWORTH, Esq. *Cincinnati, Ohio.*

IN your Magazine for August, 1835, I was gratified by your description of the different varieties of Strawberries cultivated in your vicinity. But I was surprised to find the true character of the Strawberry so little understood. I have met with no English Gardener, possessed of the requisite knowledge, to raise this delicious fruit in abundance. For the information I possess on this subject, I am indebted to an illiterate market gardener. In speaking of the Hudson Bay strawberry, you state "there are sterile and fertile plants, and that the former should all be destroyed." If they are, and none but your fertile plants are retained, from ten acres of vines, you cannot raise a single perfect fruit. In this strawberry, the male organs are so defective in the fertile plants, as not to be able to impregnate them, and in the sterile plants, the female organs are so defective, that they cannot be impregnated. I speak advisedly. The fertile plants, never do, as many imagine, become sterile by running. I have kept separate patches in my garden for fifteen years, and never had a fruit from either, unless for experiment, I have, when in blossom, set a sterile plant by the fertile ones. Market Gardeners, who understand their business, can tell the barren from the bearing plant, as well when out of bloom, as when in bloom. It is a secret, too profitable to them, to divulge it. The male, or rather the plant in which the male organs predominate, are more vigorous than the bearing vines, and producing no fruit, produce ten new plants, where the bearing vine produces one, and

soon take sole possession of the bed, by rooting the others out. You say the Early Virginica, is a shy bearer. Properly understood, it is one of the most abundant bearers. This variety, has its sterile and fertile plants; but different from the Hudson, its sterile plants, produce fruit, but about one half the blossoms fail, and the fruit is small, and many of them imperfectly formed. The fruit is very sweet, and ripens earlier by two or three days than it does on the fertile plants. The fruit of the fertile plants, is large, finely formed, and not one blossom in a thousand will fail (unless allowed to stand too thick) if there be as many as one sterile, to ten or twelve fertile plants. The sterile Hudson, will impregnate the fertile plant of this variety, but the Chili will not impregnate either the Hudson or Scarlet, which proves they are distinct species, and settles that mooted point; to wit, that all are not, as Knight supposes, mere varieties. When last in Philadelphia, and advancing these doctrines to the intelligent horticulturist, Mr Buirt, he expressed his perfect conviction that Keen's seedling, was an exception to my rule, and was a never failing bearer, both in England and the United States. I saw his beds of Keen, then in full bearing, with not a barren plant among them; but his Hudson's were adjacent, had sterile plants, and to me at once explained the reason why his Keen's were productive. He had a few plants of the fertile Keen strawberry, in a part of his garden, entirely separated from all others; and we agreed those plants should settle the question. They were large vigorous plants, in full bloom. He wrote me three days since, that they did not produce a single perfect fruit, and but very few half formed berries. A fertile Chili, or Wilmot's superb, I have never seen. The blossoms are of monstrous size, but the female organs are mostly defective, and generally, not one blossom in twenty is impregnated. I imported five celebrated varieties from England. Not one blossom in twenty produced a perfect fruit. The female organs were defective. I have met with but two varieties of the strawberry, in which the male and female organs were perfect in the same blossom. I have never seen a white variety that had not both perfect, but the fruit was always small. The same is true, of all the Alpine monthlies, I have seen. I have seen the native strawberry, in different States of the Union, but I never met a plant that had the male and female organs perfect in the same blossom. I have found our most intelligent Botanists,

incredulous on this subject. It is the more surprising to me, as it was discovered by Duchesne a correspondent of Linnæus, to whom he communicated the discovery. In raising pure seed, both kinds are produced, as I have frequently tested. Before I became enlightened on this subject, by a man who could neither read nor write, a quarter of an acre of ground would not supply my table with fruit, now, thirty feet square will do it. When in blossom, the most inexperienced will at once discover the difference. The barren blossoms, are double the size of the bearing ones, and the stamens may be seen at the distance of twenty feet. In the bearing plants, the stamens are not perceptible, till the hull is separated from the blossom, when they may be discovered, hid beneath the female organs. In the sterile plants, the female organs are hid by the stamens. In the Alpine monthly, both are perceptible, and perfect. English writers say, they have discontinued the cultivation of the Hautbois Strawberries, from their disposition to become barren by running. It is a mistake. A bearing plant, never did produce a sterile one. In the Hudson Bay in particular, they have at all seasons, distinctive marks, and can be easily distinguished. These marks, are well known to most of the Market Gardeners about Philadelphia, and they make their profit by concealing their knowledge.

I did import one variety of Strawberry from England, that to a certain extent, disappointed me. The male organs greatly predominated, yet from one half to two thirds the blossoms were impregnated, and produced fruit of a medium size, and I have found it valuable to plant with the fertile Hudson, Early Scarlet and other varieties of the same species. But the Market Gardener before alluded to, in whose observation, after forty year's practice I have great confidence, assures me, that to produce very large fruit, the sterile plant of the same variety, has the advantage. I challenge any Horticulturist in the Union, to produce a single vine, of any variety, that shall produce large fruit, unless a considerable proportion of the blossoms shall fail for want of impregnation.

Cincinnati, Jan. 1837.

ART. II. — *Plantations of Forest and of Timber Trees, Osage Orange (Maclura aurantiaca) Climate, Soil.* — Communicated by Mr WILLIAM KENRICK.

I AM induced at this time to write on the subject of our Forests and our Timber Trees, by an article which I lately saw in that excellent publication, the "Cultivator," which is edited by Judge Buel, at Albany. In that publication he remarks that "*the Osage Orange is tender, even more so than the Morus Multicaulis.*" He then proceeds to state as evidence, that with him, the Osage Orange had invariably been killed down every winter. His observations in regard to this tree were probably elicited by an article written by me, and which I saw republished in some of the public journals of Albany and elsewhere, concerning this tree, wherein I had asserted that the Osage Orange is hardy, as it had endured uninjured, the rigors of the last seven winters, near Boston.

How shall we reconcile the truth of both these statements, which are so directly opposed, except it be by a reference to some very material difference of climate, between Boston and Albany, although both are situated nearly, if not precisely, in the same parallel of latitude? This difference of climate I shall shortly and briefly proceed to show: stating also, all the material evidence on which my assertion was founded.

Here stand the trees of the Osage Orange in a bleak and exposed situation, the living witnesses of the truth of my assertions. For so far as I can know, there are no others of any considerable size in the State, except only, at the Botanic Garden, in Cambridge. Both my trees stand on the hill where I reside; the one in a Northerly exposition, the other Westerly and Northerly. The one measuring seven inches in circumference, and the other eight inches near the ground. The one ten feet high and the other eleven feet. Here they stand, and where they have ever stood since the spring of 1829, without any protection, and yet uninjured during all our late most unusually rigorous winters; and I invite any one to see them; the soil rather springy, and loamy, the foundation a hard pan. My supplies of this tree have generally been very limited, as I always purchased most all for the supply of my orders: and I had never lost a tree by winter.

Yet having in December last, read the account and the sweeping assertion of Judge Buel, all which was perfect news to me, and reflecting that on some grounds of mine in a lower situation, I had a few thousands of these trees, which I had purchased last spring of Mr D'Arras, of Philadelphia, and reflecting that these trees were at that time young, and but of a single summer's growth, and being received and set out late in a bad summer. I concluded as the tree was yet very rare, that prudence dictated caution. It was not till the present winter had set in, and the ground was hard frozen, that I caused horse manure (a practice not usual) to be spread around their trunks and over the roots of all, leaving their whole tops quite exposed: as we know by experience, that even in this climate, the young trees of but a single summer's growth, of the Cherry, the Quince, the Plum, and the Pear, and some other kinds, require protection during the first winter, on a soil rendered defenceless by cultivation, and we never leave them exposed till the second winter, when if strong and well rooted, they require no more protection.

The fact seems to be, that the climate of Albany, is subject to extreme and killing cold during winter from its position, which is quite unlike that of Boston. I have never sought particularly in our Journals, to ascertain the extreme degree of cold of that city, but only do recollect, that times have been named when the thermometer had descended to 24 degrees belew zero, at Albany; and I think, as low as 30 degrees below zero at Troy, which is but a few mlles above Albany.

My attention was recalled to this subject, by Mr Douglas, an intelligent gentleman from Albany, who called on me last winter, who spoke of the cold of the winters of Albany, when compared with ours, although both are in similar latitudes. Also by a letter from Judge Buel himself, an extract of which is recorded in the New England Farmer for August, 1829, wherein he has stated as follows.

"The past winter has been dreadful to our Cherries, Plums, and Pears. We probably lost 5000 in our nursery alone. The Peach and Plum blossomed poorly, and the fruit as well as that of the Cherry and Pear have been almost totally destroyed by insects and by frost."

Again, last summer, and during two or three days while I sojourned at Hartford, in Conn. I became acquainted with E. W.

Bull, Esq. of that city, a most respectable and intelligent gentleman, and an accurate observer. He stated to his certain knowledge, that the whole valley of the North River was another and different climate from ours at Boston, and subject to the most intense and destructive cold during winter, and especially above the Cattskill mountains. He mentioned in proof, the evidence of Mr Wilson, who is the partner of Judge Buel in their extensive nursery establishment. Mr Wilson had stated to him that they were nearly discouraged as to the cultivation of the Cherry tree, so liable were they to be destroyed by their winters. Mr Bull also stated to his own knowledge, that the whole valley of the Connecticut from Canada downwards to the sea was another and different climate from ours at Boston. He mentioned as evidence, the destruction of the Pear, Peach and Cherry trees on his own estates, within the limits of that city, part of which I witnessed.

I saw also, in the summer of 1835, at Mr Lyman's in Manchester, near the Connecticut River, where a whole nursery of Cherry trees of three or four years growth, had been killed by the previous winter. Also, I received a letter in the spring of 1834, from Mr Welles, of Glastonbury, lower down the river, stating that in the preceding winter, many of his large bearing trees of the Apple, Pear and Cherry had been cut off and destroyed entire.

Mr Joseph Davenport, of Colerain, Mass. and a critical observer, also has informed me, that during his frequent travels up and down the Connecticut river road in 1835, he had observed in particular situations in Northampton, that many of the Mountain Laurels (*Kalmia latifolia*) and also the Buttonwoods, had there been killed by the previous winter. Similar destruction he had also witnessed in various places along the road, on the west side both above and below Springfield Bridge, in the Cherry trees, the Pear, and the Apple, and particularly the Peach trees, whose destruction in certain situations was complete, caused by the severe cold of the previous winter.

This intense degree of cold, is caused by the position of the valleys of these rivers, which all run from the North, or in the direction from Canada due South to the ocean. And the prevailing winds throughout the valleys of these rivers, is seldom across the stream, but in their longitudinal direction, up or down. This direction they acquire by the reflection of the winds as they strike the

sides of the hills and mountains, causing them to flow up or down the valley over the extensive plains, and the surface of the waters, where they can pursue their course freely, without obstruction. These winds bring down during the winter from high northern regions, and from other climes, a degree of cold the most destructive, and the climate of Canada let loose escapes, finding a free passage through these main channels.

The copious exhalations from these three great rivers by day, descending by night on the hills, roll down by their superior gravity, descending and resting on all the low plains and valleys, causing also the destructive frosts of summer.

This may serve to account for the excessive cold, which is experienced throughout the whole valley of the Connecticut River. At Windsor, Vt. the thermometer has, during the present winter, fallen as low as 30° below zero. And at Northampton, two years since, it was observed as low as 33° below zero.

Thus at Lancaster in this State, on the low plain, on the river Nashua, the thermometer was observed by Mr Breck, to descend, two years ago, as low as 35° below zero. This unusual and excessive cold produced a destruction alike extraordinary. Lancaster is situated on a very large and beautiful plain, hemmed in on two sides by hills, with an extensive opening to the North. Yet, on the neighboring hills of Mr Wilder, in Bolton, and but two miles distant, the thermometer indicated a climate of a far milder character during winter.

Franconia, in New Hampshire, is not very remote from the Connecticut, but on another river. This place is subject, during winter, to a degree of cold the most excessive, from its peculiar position and exposedness to the cold winds of the North, which here concentrate their forces between the gorges of the neighboring hills. During the present winter, the thermometer has fallen as low as 38° below zero at this place, but this is not very uncommon there. In some other winters, it has been observed to descend as low as 40° below zero.

Our climate is modified materially by its proximity to the ocean, and from various other causes.

The climate of a country, and especially on extensive plains, may be much ameliorated during winter as well as summer by plantations of forest trees, particularly by those of the evergreen class.

And I find that most foreign writers have explicitly enjoined, that all gardens should be screened from cold winds on the exposed sides, either by hills or by ranges of forest trees compactly arranged, but not so close, but that every tree may preserve its branches entire, from its summit to its base.

I would wish to call the attention of our landholders to the cultivation of forest trees, either for the purposes of timber or of fuel. I have often been struck with the appearance of desolation, which is exhibited in the aspect of our hills, whose bald summits form a prominent feature in the landscape, in all the older settlements of our land. The forests covering the summits of these hills, like the human hair which crowns the summit of the head, would constitute the greatest ornament of the country. Shorn of these, they are despoiled of their beauty. Travelling among the islands of our coast last summer, and particularly over the Island of Nantucket I was forcibly struck with the desolate appearance of the whole Island. For the most part, not a forest or shade tree was any where to be seen, even for the protection of the numerous herds of sheep, which there roam at large, exposed without even the shelter of a tree, to the scorching sun of summer and the cold blasts and storms of winter, here they roam in winter and summer without protection, devouring every shrub and tree that will serve as food. This island, was formerly covered with forests of the most luxuriant growth, an evidence that the soil is by nature fertile. These forests were once the protection of the soil, drawing as they did, their nourishment in part from the atmosphere, so far from impoverishing, they always improve the soil which they retain, and by the protection they afford from the frost of winter, which sometimes destroys the herbage, leaving the naked soil exposed in summer to the scorching sun, and to be blown into the sea, by the winds, as is actually the case there.

The price of fuel and of timber is fast advancing annually ; and as soon as these new forests can be reared, a profitable and advanced sale would be found. The annual consumption of our innumerable steamboats on our great rivers alone is prodigious, particularly of the most combustible kinds of fuel. In passing from New York to Providence, on board one of the boats, I found they consumed twentyfive cords of pitch Pine, during the passage of about eighteen hours, between these two cities, at the rate of four

thousand cords in one hundred and sixty trips, or in a year. And the number of boats on all our great rivers and lakes which now amount to some hundreds, will soon be augmented to a thousand, and will consume some millions of cords of wood in a year.

Forest trees may be raised by sowing the thoroughly ripened seeds, as soon as they are gathered from the tree; the smaller seeds but an inch deep or less, the larger seeds from two to three inches in depth. When a year old, transplant them into nursery rows pretty close, shortening the tap root, that they may throw out lateral roots and chiefly that they may suffer less by removal at the final transplanting. Never prune off a single limb till the trees are four or five feet high, but only shorten occasionally until the last or final transplanting, which may be done early, while the trees are rather small.

In old countries, we are informed, that their waste lands, and hills, even the most barren, rocky and inaccessible, are covered with forest trees, holes of suitable dimensions being dug through the sod.

Their modes and systems of planting, are various. In some places, oaks are first set at an extended distance: between these, other kinds are planted, as the Ash and the Larch and all valuable timber trees, for other uses; and the intermediate distances with another class; and between all, Ashes, or other trees, suitable for hoop poles, are set very thick, that the whole ground may be well covered: all these serve as a shelter by the mutual protection they afford. As soon as the last named are of sufficient size, they are cut out for hoop poles, and thus the first thinning is effected. After another and suitable period, another class are cut out, and thus the second thinning is accomplished; and so on, until finally the oaks alone are left, to take complete possession of the soil. The last, when fully grown, serve for the construction of their ships, bridges, carriages for cannon, and the use of their armies, and for agricultural purposes, and for all other uses where great strength and durability are required; even for the doors, wainscoting, or floors of their public edifices and private dwellings.

The system adopted in some countries, where fuel alone is the object, is to cut over the whole ground complete every twenty years, then another growth of timber will start up anew: — and the growth

of wood and the increase, will still continue about the same, while the capital which has been expended, is again recovered, and may again be applied to new uses and purposes.

In Britain, timber as well as fuel commands a very high price, compared with the price in our own country. The Scotch Larch and the Scotch Fir are trees eminently celebrated for the valuable timber which they afford, and also for their rapid growth; they even flourish when planted on the poorest ground. And the celebrated politician, Lord Erskine, who is reputed also to be eminently skilled in all that relates to plantations of forest and of timber trees, has asserted, from his own experience, that in that country, four hundred acres of land set out during twenty years, with the Scotch Larch and Scotch Fir, will produce annually an income of ten thousand pounds sterling, or about fortyfour thousand dollars a year. His plan was to begin by planting twenty acres the first year, and thus to continue planting twenty acres every year, until finally, in twenty years, the whole four hundred acres will be completely covered. And now the first twenty acres which were planted are to be cut down and immediately replanted, and thus the same system is to be continued perpetually.

It must be confessed, that nothing like this great amount could be expected, or even hoped for, for a long time in our own country; yet ultimately we must adopt these systems, — as our forests are rapidly diminishing, others must be planted ere long to supply the demand for timber and for fuel. The subject of timber trees, I may reserve for another and future communication.

The forests which cover the plains and the summits of the hills, are the natural protection and cause of innumerable springs which arise on their summits, or on their sides, as these springs are found to diminish or totally to disappear on the destruction of the forests. In regard to our forests, as also in regard to our soil, the same system with us, has but too generally been pursued, as has been practised in all other new countries, from the first settlement of our country, down almost to the present day, namely, *to take all and to give none.* To exhaust the soil continually, and to restore nothing in return, is the general mode which is at first adopted in all new countries.

To this cause, not less than to the late untoward season, and to the insufficient encouragement which is afforded to agriculture, may

be ascribed the extraordinary spectacle and position which we now exhibit to the world, of a nation wonderful for its energy, enterprise and industry, possessing the finest climate on earth, compelled at this day to resort to foreign countries for some portions even of the necessaries of subsistence. This state of things has been brought about in a great measure, by certain of our most barbarous laws, which are still cherished, having a most pernicious and unequal bearing on the prosperity of the husbandman.

Nonantum Hill, Newton, Feb. 1, 1837.

Art. III. — *Knowledge of Plants applied to Farming and Gardening.*

The chief advantage of a scientific knowledge of plants is, that it teaches the *general laws* of vegetable economy, and we are enabled to apply this knowledge to a great variety of cases which occur in practice. Instead of being under the necessity of ascertaining by experiment, a great number of facts, we determine a general principle by experiment, and this general principle serves as a foundation, from which we may at once judge of the truth or error of anything which may be directly referred to it. We hope it may be interesting to the younger class of our readers at least, to take a very brief view of the science of Botany, and the manner in which botanical knowledge is applied in practice.

Botany is that part of natural history which treats of *plants*. The term *plant*, in its most proper sense, applies to everything in the vegetable kingdom, from the smallest herb which we tread upon, to the largest forest tree. It includes everything from the minutest moss upon the rocks, to the gigantic pines upon our western coast, of sixteen feet diameter and two hundred and thirty feet in height.*

* The *Pinus Douglassii* upon the banks of the Columbia river, forms extensive forests and grows to the height of two hundred and thirty feet, and is upwards of fifty feet in circumference at the base. The *Pinus Lambertiana* grows in Northern California, but does not form dense forests. One tree which had blown down, measured 215 feet in length, 57 feet in circumference at 3 feet above the root, and 17 feet 5 inches at 134 feet above the root. Some of the standing trees were evidently taller.

The number of different plants which botanists have already named and described, amounts to nearly sixty thousand; hence, without scientific arrangement, such a vast multitude would be but an inextricable mass of confusion. Plants are accordingly divided into classes, classes into orders, orders into genera, and genera into species; those being placed in the same divisions or groups which have some common, fixed and leading characters or resemblances. Without this arrangement, if an unknown plant should occur to us of which we should wish to determine the name, it would be as impossible to determine such name by description, as it would be to find a word in a dictionary without arrangement. We would have to turn over many thousands before we might chance to find the right one. But by means of arrangement we turn directly to the description, in the same way that we turn directly to the definition of a word in a dictionary by means of the alphabetical order of its arrangement. In determining the name of a plant, we first find the class to which it belongs, then the order of this class, then the genus of this order, and lastly the species of this genus. All plants belonging to the same species, are considered to have originally sprung from the same seed. Consequently if there are different varieties belonging to a species, they must have been produced by changes in successive generations of that species. But the seed of one species can never so change as to produce plants belonging to a different species. For instance, the pear and the apple belong to the same genus, but to different species; consequently seeds of the pear can never so change into varieties as to produce apple trees; nor can seeds of the apple ever produce pear trees. There are many different sorts of apples, which are all varieties produced by a change in the original seed of the species, but no change of this kind in any species can ever produce a different species. Hence, if a farmer should hear the opinion advanced, that one plant may deteriorate or in any way be transmuted into another plant, he should ascertain whether the two named plants belong to the same species or not; if they do not, he may be confident that such transmutation can never take place. If they are found to belong to different genera, the certainty of no such change becomes if possible still greater.

The botanical or scientific name of a plant, is the name of the genus and the name of the species to which it belongs, joined to-

gether; thus, the name of the genus to which the apple belongs, is *Pyrus;* and the name of the species is *malus;* consequently the botanic name of the apple is *Pyrus malus.* The pear also belongs to the genus Pyrus, and the name of the species is *communis;* therefore the botanic name of the pear is *Pyrus communis.* The terms *apple* and *pear,* are the English or common names. There is a great advantage in being able to ascertain the botanic names of plants, as well as in making use of them instead of English names (except in the most common of all plants as the apple, pear, currant, &c.) Many plants which are very useful, either for medicine, food, or other purposes, are known in different parts of the country by very different English names; and often the same name is applied to very different plants; thus a name which in one place might be applied to a valuable and useful plant, might in another place be applied to one which possesses no useful properties, or even to one extremely poisonous. Hence the use of English names only, is sometimes attended with dangerous consequences. But in all countries botanists make use of the same botanic names, and such difficulties are thus prevented.

Plants are supplied with nourishment in two ways. The first is what they absorb at the roots through the *spongioles,* which contain a great number of exceedingly small pores. The nourishment which the plant receives in this way is water, with the different substances which are dissolved in it, such as the soluble parts of manures. As soon as it is absorbed, it passes to the trunk or stem, and ascends in it through the sap vessels, which are very fine tubes running lengthwise through it, as well as through all the branches, the stems, and small veins of the leaves. These vessels or pores may be seen easily with a good microscope, by shaving off a thin cross slice from the stem of a plant or from a piece of wood. While this liquid is thus ascending, it is called *sap.* It passes into the branches, and thence into the leaves, which being flat and thin, expose it to the light and air, and it then undergoes a complete change; the greatest part of the water of the sap passes off into the air in the form of vapor, through very small pores in the surface of the leaf; at the same time, a part of the air taken into the leaf, and unites with the remaining sap, so as greatly to change the nature and quality, and it is now no longer sap, but is called the *proper juice;* and this is the second way in which nourishment is sup-

plied. It now begins to flow down the branches and stem of the plant through another set of tubes or vessels, and is gradually converted into the solid parts of the plant. Thus we see that a part of the nourishment is taken in at the roots, and a part at the leaves; but all the nourishment which every plant receives, must pass through the leaves, before it can be changed into wood. Hence we see that the leaves of plants are quite as important to them as their roots. The knowledge of this principle has a vast number of applications in practice, some of which are of great importance. It teaches us that mutilating plants by stripping them of their leaves while in a growing state, is always an injury to them; hence the stripping of the leaves of corn for fodder, which is in some places practised, should never be resorted to, nor should the practice of topping corn be pursued for the same reason; hence also the practice of cutting off the leaves of mangel wurtzel for feeding cattle, before the roots have attained, or nearly attained, their full size, should not be adopted. But in some cases the leaves are the chief crop, as in the mulberry for silk; in such case it is necessary to avoid stripping them too closely or frequently, in order that the growth may not be too often nor too suddenly checked. The knowledge of this principle also teaches us an easy way to destroy hardy and pernicious weeds. It has been commonly supposed that in order to destroy them, the roots must be destroyed; but this is not at all necessary; if we only destroy the leaves by burying them or cutting off the stems, it is plain their growth is stopped, and if this is continued the roots die. Many years ago, when it was found that the roots of the Canada thistle sometimes penetrate several feet into the earth, many despaired of ever being able to extirpate them; but if they had been acquainted with this principle, they would have known that the roots might have been easily killed by cutting off the supply of nourishment from above, which has since been very successfully done in a multitude of instances.

It is the *proper juice* (above referred to) which generally gives to plants all their useful properties in medicine, dyeing, &c., hence it is necessary in extracting these substances to know in what part of the plant the proper juice is to be found.

The course of the small tubes or pores through which the sap and juices flow, may be seen in some plants by cutting off their

branches with a very sharp knife and plunging the cut ends into colored water. Thus, if a branch cut from the poke be placed in a dye made from the Brazil wood, and put in a warm place, in a few hours the dye will be found to have run up the stem into the leaves, flowers, and even the fruit. The part of the stem which will be thus colored will show the place of the sap vessels. If now the upper end of a branch be cut, and plunged into the colored water, we shall be able in the same way to trace the course of the pores through which the proper juice descends. Some of these pores, however, cannot be discovered in this way, as they will not take in any colored liquor.

All the nourishment which a plant receives, is either by means of the water which is absorbed at the roots, or from the air which is absorbed into the leaves; all the wood in the largest and heaviest trees is formed in this way. The manner in which water and air is thus changed into solid wood, is indeed curious, but is readily comprehended by those who are familiar with the extraordinary changes shown by chemistry. The fact was very strikingly proved by a philosopher in Holland, who planted a willow weighing *fifty* pounds in a quantity of earth which he also weighed and covered with sheet lead. He watered it for five years with pure distilled water; at the end of which time the tree weighed *one hundred and sixty-nine pounds and three ounces*, and the earth had lost only three ounces.

The quantity of water which passes off into vapor from plants through the leaves, is often very great. Dr Hales found by very accurate experiments, that a sun-flower which weighed only three pounds, threw off in twentyfour hours, twentytwo ounces of water, or nearly half its own weight. In the same space of time, the Cornelian cherry (*Cornus mascula*) is said to throw off twice its own weight of water. On a warm summer's day, at a time when there had been no rain for several weeks, Dr Watson placed a bunch of grass under a bell-glass, and in two minutes the inside of the glass was covered with drops of water like dew which ran down its sides. By weighing the water, he ascertained the exact amount; and from this experiment he was led to conclude that in one day an acre of grass throws off nearly two thousand gallons of water. Some plants when cut wither much sooner than others, owing to the property they have of throwing off the water from the leaves with greater

rapidity. Hence by trying this simple experiment, we may find at once how much watering different cultivated plants require. Hence too, the reason why plants may be removed and transplanted with greater success in damp weather when the leaves give off but little water, than in dry weather when they throw it off rapidly. Hence, too, the reason why, in transplanting trees, if the roots are mutilated or diminished, it is also necessary to reduce in proportion the branches, in order to prevent the leaves throwing off moisture faster than the roots can supply it. Hence also, the reason why mown grass is changed into hay in a few hours in dry weather, while in damp weather no efforts of the farmer will enable him to succeed. The great quantity of water given off by plants, will teach us to avoid the blunder which some people make, of leaving weeds to grow round plants for the purpose of shading them and prevent the ground drying, when in fact they carry off a much greater quantity of water than would dry off the bare earth, besides diminishing the fertility of the soil. Some plants, however, give off but little water, as some kinds of moss, and may therefore in some cases be properly employed in shading the ground.

Thus, by the study of this science, farmers and gardeners may find the reason for the different operations they perform; and may very often know, or be greatly assisted in determining, what is necessary and what is not necessary for their success. At the same time they will be enabled to guard against mistakes, by which great injury is often done when least intended.—*Genesee Farmer.*

Art. IV. — *On the Camellia Japonica.* By S. Walker.

" What nature alas! has denied,
* * * * * *
Art has in a measure supplied,
And Winter is deck'd with a smile."

Permit me, if you please, Mr Editor, through the pages of your periodical, to present my best thanks to Col. Marshall P. Wilder, of Dorchester, for his polite invitation to visit his greenhouse; and to offer to your readers a few remarks on his Camellias.

Col. Wilder has probably the greatest variety, and some of the

finest and largest specimens of the Camellia Japonica, of any person in this country; his importations of this magnificent plant, have been very extensive, consisting of nearly all the last varieties raised in England, France and Germany. I noticed some, of recent importations, from twelve to fifteen feet in height; these plants will, when they shall have fully recovered from the injury of transportation from Europe, show to great advantage, towering aloft among others, no less beautiful, but of smaller growth. Green states that the Camellia Japonica is a vast and lofty tree, in high esteem with the Japanese, for the elegance of its large flowers, which exhibit a great variety of colors, and for its evergreen leaves; and that it is common everywhere in their groves and gardens, flowering from October to April. It is a native also of China, and occurs very frequently in Chinese paintings. Had the Camellia, (says the Editor of Flora Domestica) been a Greek, Italian or English plant, there would have been a great deal said of it by poets and lovers; and doubtless it makes a figure in the poetry of Japan. But unfortunately for our quotations, though perhaps fortunate for their own comfort, the Japanese have had most of their good things to themselves. But to return to *Hawthorn Grove* and to what I saw. After taking off my Lady's pelisse and tippet (for she was also invited by the gallant Colonel, who does nothing by halves, as his flowers testify) and also taking off my own cloak, and thus prepared to make my debut into the presence of Flora, I was conducted into the greenhouse by the proprietor; at the first view I exclaimed —

"'Tis a bower of Arcadian sweets,
Where Flora is still in her prime,
A fortress, to which she retreats
From the cruel assaults of the clime.
While Earth wears a mantle of snow,
These flowers are as fresh and as gay
As the fairest and sweetest, that blow
On the beautiful bosom of May."

On our right hand and on our left hand, along the entire length of the conservatory, were placed specimens of this choice flower: we had scarcely commenced our examination, before we were agreeably interrupted by other visitors, friends of the proprietors and of ourselves, and with this addition to our company, we recommenced our examination, and with increased satisfaction, at least it was so to myself, and I think I may say so for all the company, as I know of

nothing selfish in the whole economy of the goddess of flowers; she appears to increase her favors in proportion to the number of admirers, giving to all individually and collectively, a portion equal to their greatest love or desire; for this reason I love to attend her courts on a *gala-day*, and to be surrounded by her courtiers and lovers. But it is otherwise when I wish to look into her mysteries; then the small still voice whispers into my ears, and says, be still — admire — wonder — look up and know that I am God. Mr Wilder gave us the names of his extensive collection of plants, and in some cases the *pedigree* of some of the varieties; three fine sorts then in bloom, I understood Mr Wilder to say, were produced from seed out of one capsule. I noticed among other beauties, Punctata, Rossii, Imbricata, Chandlerii, Eclipse, Lady Hume, Fimbriata, and two splendid plants of the old double white, one of which had upwards of sixty blossoms on it at that time; this last variety is so great a favorite with me, that I cannot close this passing notice, without adding a few words in praise of this bridal flower. It is as Burns expresses it, "loveliness beyond compare." If I could be the owner of only one plant of the Camellia, I should say, let that one be the old double white. Eximia and Reticulata, which I have heretofore seen in great perfection at Col. Wilder's, stand next in my estimation, as fine varieties of this splendid shrub.

Roxbury, Jan. 25, 1837.

ART. V. — *Directions for Preserving Plants.* By a LADY.

IT is unnecessary to enumerate all the advantages resulting from the possession of a collection of preserved plants, as they can be fully appreciated only by a person who has made considerable progress in the study of Botany. But the beginner requires to be informed, that nothing can more materially aid him in his endeavors to become familiar with the objects which vegetation presents to his view, than such a collection, to which he can at all times refer, either for refreshing his memory, or for instituting a more minute examination than he had previously made. Plants are generally preserved by drying, and a collection of this kind is called a *Hortus siccus* or *Herbarium*. Various methods are in use for drying plants,

but the following, being among the most simple and efficacious, and attended with little difficulty, is here preferred.

The articles necessary for the accomplishment of the object in view, are, a quantity of smooth, soft paper, of large size (sixteen quires, perhaps;) eight boards of the same size, about an inch thick, of hard wood; four iron weights, or pieces of lead, two of them about forty pounds weight, the others half that number, or in place of these weights a number of clean bricks may be used, or in short any heavy bodies of convenient form. Along with these articles, a botanical box is necessary. This box is made of tin, and varies in size, from nine inches to two feet in length, according to the taste and avidity of the collector.

In gathering plants for this purpose, such as are smaller than the size of the paper are to be taken up, roots and all. In many cases, portions only of plants can be preserved, on account of their size, and then the most essential parts are to be selected, including always the flowers. Plants to be preserved, are to be gathered in dry weather, and immediately deposited in a tin box, which prevents their becoming shrivelled by evaporation, if gathered in wet weather, they must be laid out for some time on a table or elsewhere, to undergo a partial drying. When roots have been taken up along with the stems, they ought to be first washed, and then exposed for some time to the air.

Let us now suppose that a dozen specimens are procured. Over one of the boards, lay two or three sheets of the paper, on the uppermost of which spread out the plant to be dried, unfolding its various parts, not, however, so as to injure its natural appearance.

A few of the leaves and flowers ought to be laid out with particular care. Over this specimen, lay half a dozen sheets of paper, on the uppermost of which lay another plant as before, and so on successively, until the whole are disposed of. A few sheets are then laid upon the last, and a board placed over all. Plants, viewed with reference to drying, may be divided into two classes, the one comprehending those which being thin, soft, and flexible, require little pressure to reduce them to a level, the other including such, as being stiff and thick require much pressure.

Supposing the above plants to have been of the first class, we lay upon the upper board one of the smaller weights. A series of more stubborn specimens being in like manner, placed between other two boards, we lay one of the larger weights upon them.

Should more specimens be collected next day, they are disposed of in the same manner: and thus successively. At the end of three days generally, the plants first laid in are to be taken out, together with the paper about them. They are to be laid in fresh paper, three or four sheets being placed between every two plants, and the whole put between two boards, with a weight over them. The second series is similarly treated next day, and so on. The paper from which the plants have been removed, is to be dried for future use.

There will thus be four sets of plants; two in the first stage of drying, and two in the second stage. The plants of the second stage sets should be taken out about three days after they have been deposited, and after dry paper has been put about them, returned to their places. The paper may thus be shifted until the plants be perfectly dry, when they are finally removed. Each plant is then placed in a sheet of dry paper, and along with it is deposited a slip of paper, on which are written the name of the plant, the place in which it was gathered, the time of gathering, the soil, and such other circumstances as may tend to elucidate the history of the species. Thus prepared, the plants are packed up in bundles which gradually enlarge their dimensions, or increase in number till the end of the season.

Having in this manner arranged a certain number of plants, the collector has now to arrange them. For this purpose, he has to procure a quantity of good, stout writing or printing paper of large size, folded into folio, which is to be stitched in colored covers, making fasciculi of five or six sheets each. A quantity of fine large pot or other writing paper, in half sheets, folio size, cut round the edges, is also to be at hand. Let a number of narrow slips of different length, be cut from a piece of the same paper, and let some prepared isinglass or dissolved gum be in readiness, together with a camel hair pencil. Take a dried plant, lay it upon a leaf of the fine cut paper, then fasten it down by means of a few of the slips, to which isinglass or gum has been applied, laid across the stem and some of the branches. Two or three plants are generally sufficient for a plant or specimen. In this manner all the dried plants, destined to form part of the herbarium, are treated.

Write the name of each species on the top of the leaf, and transcribe the notice respecting the place in which it was gathered, &c.

at the bottom. Then arrange the plant according to system, and lay between every two pages of the fasciculi. The fasciculi are formed into bundles, by being laid alternately up and down upon each other, as they do not lie conveniently when the heads of the plants are all at the top of the bundle, because the stalks and roots are thicker than the flowers. These bundles, consisting each of ten fasciculi, may be covered by pieces of paste-board tied by strings. The collection is kept on the shelves of a cabinet, or in a chest. To prevent the attack of insects, it is necessary to keep beside it a piece of sponge soaked full of rectified oil of turpentine: and to ensure it against decay from damp, it ought to be kept in a dry and well ventilated place.

The above, is an orderly method of forming a herbarium; but many other expedients are resorted to. Most plants dry sufficiently between the leaves of old books, and many collectors save themselves the trouble of forming a neat collection, by huddling up their specimens in the least expensive or laborious manner.

Another method of putting up dried plants, is the following:— The specimens are fastened to leaves of stout paper in uniform size: the species are then arranged in order, and all those of the same genus are placed within one or more sheets of paper, on the outside of which the generic name is written. The generic fasciculi are then collected into bundles, on which are written the names of the classes and orders. Some persons keep their specimens loose, within sheets of paper. This methed is the most convenient for the minute examination of the plants, but has disadvantages which render it inexpedient in ordinary cases.—*Floricultural Cabinet.*

Remarks on the above, from the same work. By Primula Scotica.

I have read "A Lady's" directions for preserving dried plants, and have one or two suggestions to offer, by way of improvement, should you think them worthy of insertion. I always use blotting paper to dry the plants in, as it absorbs best; if they are very succulent, I prefer the thick white kind. Instead of wooden boards, I make use of millboards, as less clumsy, (one sheet cut in two,) and two dozen of them will enable the drier to have a great number of plants under the press at once. Nearly all plants require only two or three sheets if they are laid in the innermost; a millboard slide placed between every two or three plants; and at the end of three

days, if the papers are damp, the plants should be carefully taken out, and put in the same number of dry smooth sheets. If necessary, the papers should be changed in two or three days after this, but most plants will be thoroughly dried in six days, some sooner. My weights are leaden, with handles, one hundred and twenty pounds, and two hundred and ten pounds each, and the weights answer better than heavier ones. The plants should be dried, and kept in a dry airy room, where there is no fire. A plant should never be taken from under the weight till it is quite stiff. I keep my duplicates in half sheets of blotting paper, laying those of the same species between two loose sheets, and tying up a number of these leaves and plants between two half sheets of millboard. My herbarium is a large half bound book, composed of cartridge paper of the largest size, and between each leaf I have a slip of cartridge paper bound in, the length of the page, so that when the book is full, the edges close evenly. Each page is cut with four slips, so as to admit a leaf of the largest folio writing paper, leaving a good margin of cartridge paper. On each leaf of writing paper, I fasten a plant with thin hot glue, touching one or two leaves and flowers, on the back of the stalk. One or two leaves should have the under side uppermost, also one or two flowers, so as to display the plant naturally. If the plants are small, two varieties, or two species even, may be placed very well on one page. At the foot of the plant, should be written the Latin and English generic and specific names, a reference to some Botanical work, as Hooker's British Flora, the date and place of gathering. This plan, which enables me, as my collection increases, and the genera are filled up, to move the plant on its half sheet to any part of the book, was recommended to me by an eminent Botanist, and I have found it very preferable to those generally employed. Neither paste nor gum will answer so well as glue, if it is used while hot.

ART. VI.—*List of New and Rare Plants, noticed since our last.* From Foreign Works.

1. YUCCA FLACCIDA — Weak leaved Adam's Needle. This species is probably a native of North America. It is cultivated in the Garden of the London Horticultural Society. This species

does not appear to produce a stem as the others do. The flower stalks rise some feet high, each producing a panicle, having numerous flowers of a greenish yellow color, the tips of the petals having a small spot of red at the lower side.—*Bot. Reg.*

2. CENTAUREA BALSAMITA — Costmary-leaved. Compositæ. Syngenesia, Polygamia Æqualis. Syonym, Carduus orientalis. Seeds of this plant were sent from the Imperial Botanic Garden, at St Petersburg, to this country. It is a native of America, and has been recently introduced. The plant is a hardy perennial. Stems, rising about two feet high, each terminated by a moderate sized flower, of a sulphur color. It is cultivated in the Chelsea Botanic Garden.—*Brit. Flow. Gard.*

3. CRATÆGUS ARONIA — The Aronia Thorn. Synonym, Mespilus orientalis. This species is a native of the Levant, and is one of the largest and most like timber of any of the thorns. The plant is a very free grower, and grows to a very neat form. The fruit is as large as a fine sized cherry, of an apricot yellow color, and, being produced in such abundance, causes the tree to be very ornamental and a most suitable one for the lawn, or other part of the pleasure ground. *Cratægus* from *Kratos*, strength: alluding to the wood. —*Bot. Reg.*

4. CYTISUS ÆOLIUS — Æolian Cytisus. Diadelphia Decandria. The plant is a native of Stromboli, where it was discovered by Professor Gassone. Seeds of it were sent from Naples, to the Hon. W. F. Strangways, in whose garden, at Abbotsbury, in Dorsetshire, it bloomed this year. It is an erect growing shrub, the branches terminated with racemes of yellow flowers. It is supposed that the flowers will be handsomer when the shrub is older, and that they will be produced more abundantly.—*Bot. Reg.*

5. EPIDENDRUM ŒMULUM — Emulus Epidendrum. Orchidaceæ: Gynandria Monandria. This pretty neat flowering species has flowered in the collection of Richard Harrison, Esq.; to that gentleman it was sent by Mr Haketh. It is a native of Para. The plant very much resembles Epidendrum fragrans. The flower stalk is about three inches long, producing three or four flowers upon each. The pseudo bulbs of E. Æmulum are perfectly oval, and not tapered to each end as in E. fragrans.—*Bot. Reg.*

6. ESCALLONIA ILLINITA — Varnished Escallonia. Escalloniaceæ. Pentandria Monogynia. A very pretty evergreen species, much

more hardy than any other of the genus. The leaves are broad, of a pale green color, varnished, producing a very pretty appearance. The plant forms a very neat bush. The branches are terminated by racemes of many flowers, which are white, tinged with green at the under side. It blooms from the end of July to October. The plant emits a very powerful scent, rather disagreeable. It is a native of Chili, growing in the mountainous part of that country. Escollonia Montevidensis is quite hardy with us at Wortley, grows very vigorously, and blooms profusely; the flowers being white. Escallonia rubra is equally hardy, thrives and blooms most admirably. All the species are highly deserving a situation in every shrubbery. They are handsome plants even without flowers, but very attracting, when in full bloom, more particularly so, when the bush has got to a tolerable size. We find the plant to flourish well in a mixture of loam and peat.—*Bot. Reg.*

7. Euphorbia Bojeri — Mr Bojer's Spurge. Euphorbiaceæ. Monœcia Monandria. Professor Bojer sent this species from Madagascar. It is a very pretty stove plant, and merits the title of splendens, much beyond the one so called. It has bloomed in the stove in the Glasgow Botanic Garden at the end of the winter, more or less at most seasons of the year. Each involucre has four scarlet bracteæ, half an inch across, which produce a pretty appearance. The species is not so full of spines as E. splendens, more coriaceous, more oval and retuse leaves, the bracteæs are of a much higher color.—*Bot. Mag.*

8. Fuchsia macrostema: var. Recurvata — Large-stamened Fuchsia. Recurved flowering variety. Onagaria: Octandria Monogynia. This very pretty flowering variety was raised from seed by Mr Nevin, at the Grasnevin Botanic Garden, Dublin. The plant is of a most vigorous habit. The fine red calyx, has its five divisions much recovered, exposing the pretty blue petals to full view. The flower and stem are near six inches long. Like every other of this graceful, pretty flowering genus, the present deserves a place in every collection of Fuchsias.—*Bot. Mag.*

9. Lapeyrousea Anceps — Two-edged stem. Synonyms, Gladiolus anceps, G. denticulatus: Ixia Lapeyrousa. I. pyramidalis: Iridaceæ, Triandria Monogynia. The plant is a native of the Cape of Good Hope. It requires to be cultivated in the greenhouse or pit frame. The stem rises about six inches high, each producing

from six to eighteen flowers. The flower is about three quarters of an inch across, white, and fragrant, emitting a very agreeable perfume. It blooms from June to August. *Lapeyrousea*, so named, in compliment to M. Picot de la Peyrouse, author of the "Pyrenian Flora."—*Bot. Reg.*

10. MONARDA ARISTATA — Awned. Synonym — M. citriodora: Labiatæ, Diandria Monogynia. This species is a native of Arkansas Territory, as also about San Felipe, in Mexico. It has recently been sent to this country by Mr Drummond. The plant is quite hardy, and blooms from July to September. It has been stated to be a perennial, and on some occasions, annual. The stem rises to be about a foot high, producing whorls of pale rose-colored flowers. —*Bot. Mag.*

11. MYANTHUS DELTOIDEUS — Triangular-lipped Flywort. Orchidaceæ: Gynandria Monandria. This very singular flowering Orchideous plant, is a native of Demarara, found upon trees near the great waterfall of the Demarara river. It is cultivated in the collection of Richard Harrison, Esq. Aughburg, near Liverpool. The flowers of this species are very distinct from any other, the lip is destitute of the fringe of hairs, which M. cristatus, and M. barbatus have. The flower stem is near a foot long, bearing about half a score of blossoms — each near two inches across: the lip is of a rich purple color: the other parts of the flower, green, spotted with dark purple, and have a very pretty appearance. Dr Lindley has observed, "that when a third part of the genera and species of Orchideous plants was published in 1834, he was only acquainted with Myanthus cernuus, and cristatus"— the latter, the learned Professor considered a Catasteum, and the former, as the only genuine species of the genus; thus, in some degree, mistaking the real generic character of Myanthus, in consequence of the imperfect materials of which he was then in possession. But now that four species are known in a living state, it has become necessary to alter the original character of the genus, so that it may include Catasteum cristatum. This, Dr Lindley thinks is more advisable than to unite Myanthus with Catasteum, as recommended by Sir William Hooker. If the latter measure were to be adopted, it would be equally necessary to suppress the genera Monachanthus, Mormodes, Cynochus, &c., the effect of which would be to form a heterogenous collection of species, the principal combining character of which, would

reside in the peculiar succulent stems. As they now stand, each has a clear distinction, and each possesses as many species as are usually assembled under newly discovered types of structure. Myanthus, has already four; Cynoches, two; Monachanthus, two; Catasteum, five; and Mormodes one species.—*Bot. Reg.*

12. PENTSTEMON HETEROPHYLLUM — Various leaved. Scrophulariaceæ: Didynamia Angiosperma. The late Mr Douglass discovered this plant in California, from whence he sent the seeds to the London Horticultural Society. It is a hardy herbaceous species, blooming from June to October. The flower stems rise to about two feet high, and bear a profusion of flowers of a purplish-red color, of a very handsome appearance. Each flower is near an inch and a half long. It is a very desirable species, and merits a situation in every flower garden. *Pentstemon*, from *pente*, five, *stemon*, stamen.—*Bot. Reg.*

13. ASPASIA VARIEGATA — Variegated flowered. Natural order, Orchidaceæ: Gynandria Monandria. This very neat and pretty flowering species has bloomed for the first season in this country, in the collections of R. Bateman, Esq. and of Mr Knight, King's Road, Chelsea, during the present year. It is an inhabitant of the tropical part of South America, in its native state. The plant is of easy culture. The petals are yellow at the edges, and green up the middle, streaked and spotted with red: the labellum is white, spotted and streaked with violet. Each flower is upward of two inches across: the flowers are delightfully fragrant in the morning. The plant merits a place in every collection of Orchideous plants: being of easy culture, it is probable it may soon be procured at a low cost. *Aspasia*, from *aspasomia*, I embrace; alluding to the column embracing the labellum.—*Bot. Reg.*

14. AMARYLLIS PSITTACINA, HYBRIDA — Hybrid variety of the Parrot Amaryllis. This splendid variety was raised in the hot house of William Griffith, Esq. South Lambeth, London; it is a hybrid between A. Johnsonia and Psittacina. It has bloomed in the stove at the Glasgow Botanic Garden. The flowers are very splendid, usually four flowers are produced in a scape. Each flower is near six inches across. The petals are white, with a small portion of green at the lowest part, the edges and tips have a broad portion of fine crimson, and numerous crimson stripes run up the petals; altogether it is a most beautiful flowering variety, well meriting a place in every stove.—*Bot. Mag.*

Begonia Fischeri — Dr Fischer's. Begoniaceæ: Monœcia Polyandria. This pretty plant was sent from Berlin in 1835, to the Edinburg Botanic Garden, where it bloomed in the spring of the present year. The flowers are of little interest. The foliage is *smooth* when young, of a bright red, at the under side, paler at the veins, and a pretty pink above, having, too, a peculiarly silver lustre, which remains upon the old leaves, which, at that stage, are of a yellowish green on the upper side, and of a more pale red on the under side. It is a very neat plant, and well deserves a place in the stove; like the other species it is of easy culture. — *Bot. Mag.*

16. Bartonia aurea — Golden-flowered. Loaseæ: Polyandria Monogynia. A very pretty flowering annual: the flower stem rising a foot high. The plant produces a profusion of showy flowers, of a fine golden yellow color. Each blossom is about two inches and a half across. The plant is a native of California, from whence it was sent by Mr Douglass to the London Horticultural Society, in whose garden it recently bloomed. It delights in a sheltered sunny situation, and it is to be grown in a rich soil, where it will bloom profusely. The plant requires to be raised as a frame annual, and to be planted in the border in May.—*Brit. Flow. Gard.*

17. Clintonia Pulchella — Pretty Clintonia. Lobeliaceæ. A native of California, from whence it was sent by Mr Douglass to the London Horticultural Society. It is a pretty flowering tender annual, of very humble growth, only rising a few inches high. The flowers are rather larger than Clintonia elegans, blue, with a broad white spot at the centre, stained with a rich yellow. The flower is about half an inch across. Its delicacy of growth, will prevent its spreading rapidly through the country.—*Bot. Reg.*

Cyrtopodium Willmorii — Mr Willmore's. Orchidaceæ. Gynandria Monandria. The plant was discovered by Mr Henchman, in the valley of Cumancoa, in the republic of Venezuela. The species is of terrestrial habits, growing among decayed vegetables. The leaves of the plant grow more than six feet long in its native habit. The species has bloomed in the very superb collection of John Willmore, Esq. Oldford, near Birmingham, having a flower stem four feet six inches high, very much branched, producing a panicle of numerous flowers, each flower being above two inches across. The sepals and petals are of a yellowish green, spotted with dull red: the lateral petals are brighter in color, but not so

much marked as the sepals; lateral lobes of the lip of a pale red, the intermediate lobe yellow, having the edge spotted with red. A very handsome flowering species, deserving a place in every collection. *Cyrtopodium*, from *Kurtos*, convex, and *pous*, a foot; in reference to the convex claw of the labellum.

19. Craspedia Glauca. Compositæ: Syngenesia: Polygamia æqualis. Mr James Blackhouse, of the firm of Messrs Blackhouses, Nurserymen, York, went to Van Dieman's Land a few years since, and from thence he has sent the present plant to the York Nursery. It is a perennial herbaceous plant, growing upwards of a foot high. The flowers are globular shaped heads more than an inch in diameter, of a yellow color. Each of these heads is composed of yellow heads, producing a pretty effect. *Craspedia*, from *Kraspedon*, a fringe; referring to the feathery pappus.—*Bot. Reg.*

20. Cratægus Mexicana — Mexican Hawthorn. Another pretty species of Hawthorn, which is a native of the Tierrafria, of Mexico. It is a small growing tree, with dark shining leaves. In warm countries, it is an evergreen. The flowers are white, each corymb having a considerable number. They are succeeded by a *large yellow* fruit, each fruit is the size of a May Duke Cherry. Both the blossoms and fruit make a pretty appearance among the bright green foliage.—*Bot. Reg.*

21. Epidendrum Macrochilum — Large-lipped. Orchideæ: Gynandria Monandria. A very handsome flowering orchideous plant, a native of Mexico; from whence it was introduced by Chas. Horsfall, Esq. Everton, near Liverpool. In the rich collection of Mr Horsfall's Orchideæ, it bloomed during the last summer. The scape rises about a foot high, terminated by a raceme of four large handsome flowers, without scent. The flowers are, sepals and side petals, of a greenish brown color; lip, white, when old, cream colored, having a large purple spot at the base. Each flower is near three inches across. The flowers are singularly pretty. *Epidendron*, from *Epi*, upon, *dendron*, a tree; native habitation of the plant.—*Bot. Mag.*

22. Epimedium Macanthrum — Large-flowered. Berberaceæ: Tetrandia Monogynia. A native of Japan, which has flowered in garden of the University of Ghent. The flowers are very singular in form, more than an inch across, of a pale violet color, which are very fragrant. The plant is quite hardy; it is grown in the nursery

of Mr Osborne, Fulham. *Epimedium*, from *Media*, where the plant to which it belonged, was said to grow.—*Bot. Reg.*

23. IBERIS CORONARIA — Rocket Candy Tuft. Crucifera: Tetradynamia Siliculosa. This hardy annual is of considerable beauty, being very showy, and a pure white. The clusters of racemes are numerous and very large, being three or four inches long; at a distance the fine flowers very much resemble the Double White Rocket. It blooms for several months during the summer. It well deserves a place in every flower garden.—*Brit. Flow. Gard.*

24. IONOPSIS TENERA — Delicate flowered. Orchidaceæ: Gynandria Monandria. A native of Havanna, from whence it was brought by Capt. Sutton, in 1835, and by that gentleman presented to Sir Charles Lemon, Bart., in whose collection it has bloomed. The scape rises about eight or ten inches high, bearing a loosish panicle of delicately marked flowers, which are of a pale pinkish white, beautifully marked with violet colored veins. But little is known in this country of the plant of this genus: it is rare to find them in collections of Orchideæ, by reason of the difficulty of preserving them on their journey in the ship, and even when they are safely imported, they are difficult to cultivate, and are soon lost. They are native of the woods, and there grow upon the smaller branches of the trees, or upon dead branches, which their delicate white roots soon overspread. There appears to be four species known of this genus, viz. I. tenera, I. utricularioides, I. pallidaflora, I. paniculata. The flowers of the latter species are of a snowy whiteness. It was discovered in the ancient forests of Brazil. *Ionopsis*, from *ion*, a violet, and *ophis*, look, meaning violet faced.—*Bot. Reg.*

ART. VII.—*On the Culture of Mimuluses.* By SALVIA.

Mimulus moschatus — Musk-scented. This kind I have found to be perfectly hardy, having stood most severe frost during the winter, without the least perceptible injury; more particularly so, when grown in an elevated situation, as on rock work, or raised bed. The tops die in winter, but the roots remain good, and at the return of spring push forth shoots. The plant delights in rich soil. When

the summer season proves dry, the plant requires a free supply of water: if deprived of this, it will be weakly, and produced but few flowers. When grown in such a soil, and well attended with water, I have had the plant grow two feet high. I tried a single plant in a rich soil, punched off all the suckers as they appeared, and I had the pleasure to see a fine plant two feet high, clothed with blossoms; this was grown in a pot, placed in the flower garden.

I have several vases placed in a flower garden; a plant of Fuchsia, or other ornamental plant, is placed in each, being grown in a pot; I had a circular pot a few inches deep, made to fit the inner rim of the vase, and up to the edge of the pot containing the Fuchsia, &c.; in this, I planted the Mimulus moschatus, attended it well with water, the shoots pushed rapidly, and hanging gracefully down the side, flowered abundantly, having a pretty appearance, and perfuming the air to considerable distance. I painted the vase green in order to show the flowers to greater advantage.

I find that the plant speedily exhausts a soil that was well enriched at the first planting, and if not replanted, soon becomes weakly. I, therefore replant every year, by taking up the roots, as soon as the shoots push at spring, in entire masses, with the soil *adhering* and placing such upon a rich soil, fill up the interstices with similar soil; in this way the plant grows vigorously the first season.

This plant is very ornamental, when grown in pots, and kept in a greenhouse or room, a liberal supply of water being given — keeping a portion in a stand in which the pot is placed.

The plant is easily propagated, either by divisions of the roots, &c., by sowing the seed in the spring, or even by cuttings of the shoots.

Mimulus roseus. — This is a very delicate flowering species, requiring a rich, sandy loam. It is easily raised from seed, and flourishes well, either in the open ground, or cultivated in pots. The flowers are not produced so numerously as in other species or varieties I possess, but they are of a pretty rose color.

Mimulus variegatus. — This is a very neat and pretty flowering species, making a showy appearance: it delights in a rich loam. A bed of it looks well. It also grows freely in pots. The plant is easily propagated, either by seed or division. It is a far prettier species, than the roseus, and deserves to be in every flower garden.

Mimulus rivularis. — A considerable number of very handsome

varieties have been raised from this species, as Youngii, Smithii, Elphinstonea, Rowsoneana, Wheelariana, Ranbyana, &c. This plant delights in a rich, moist soil, mixed with sand, and if it be a little shady it is beneficial. The colors of the flower are better, and the plant more vigorous. A free supply of water is necessary, in order to grow this successfully. I have had a single plant grow three feet and a half high, and be six feet in circumference, producing a vast profusion of flowers, most amply repaying the little extra attention paid to its culture. When I obtained this plant at first, I was instructed to grow it in a small shallow pond, keeping the roots immersed in water; I was told it would there succeed far better than by any other method, but in this particular I find it very much to the contrary. A soil as above described, and a good supply of water in dry weather, is all that is required. I had a plant of *M. Elphinstonea*, grown in a pot this summer, the size above particularized. The species and all its varieties are readily increased by taking off rooted shoots, or by cuttings. Seed sown in spring, and the plants pricked out into a bed of rich soil, will flower by July and continue through the season. The impregnation of these kinds, with any or all of the others, produces a pleasing and interesting variation of flowers.

M. Bifrons. — The flowers of this pretty species are large and showy. The flower stem rises about eight inches high. The fine bright yellow blossoms, with one large deep crimson spot, are very pretty, they are highly ornamented from April to November. The plant in all respects, requires a treatment as directed for *M. rivularis*, and all its varieties.

M. glutinosa. — This is an old inhabitant of our greenhouses, and is most deservedly so. The plant is shrubby, and of easy culture, producing abundance of buff-yellow flowers. It delights in a rich sandy soil, having the pots well drained. This kind being planted in the open borders in spring, becomes a most pleasing object through summer. It requires a warm and sheltered situation, and to be grown in a soil as above stated. Cuttings of this kind readily strike root. I have endeavored to obtain plants of this kind, being impregnated with *M. rivularis*, and having succeeded in getting seed, I hope next year to be gratified with satisfactory results, by having flowers of the herbaceous kinds upon a shrubby plant.

M. cardinalis. — This is the newest species I possess. I pro-

cured a plant in the summer of 1835, which bloomed and produced seed. I sowed it in January, and early in February potted the plants into a rich soil, keeping them in a Melon frame, with a moist and brisk heat. I repotted the plants every two or three weeks, up to the end of May, and when too large for the frame I placed most of them in the greenhouse, where they were kept through the summer. One plant has grown six feet high, and spread proportionably, making a fine show with its blossoms. Other plants were from four to five feet high. — A rich soil, well drained, *plenty* of pot room, and a free supply of water, will furnish plants of the above size.

About the middle of May, I turned out a few of the potted plants into the open border in the flower garden; one reached five feet high, the other very fine. In this situation, I gave a free supply of water. The plants in both instances were fine specimens, and very superior to any I have seen elsewhere, and had a most beautiful appearance when in bloom. The largest plant had one hundred and five flowers out at one time.

I tried one plant to stand in a pan of water, and the others to be watered in the usual way, but giving a very free supply: and by the latter mode the plants were not only healthier, but much larger. I concluded the continued water in the pot soured the soil, and thus injured the plant. I have now a number of young plants in small pots, for next year blooming. I judge a cool part of the greenhouse will be suitable to keep them in during the winter.

I find that there are two or more kinds by the name of cardinalis; the one I have, is of a fine deep scarlet red, with the segments of the limb of the corolla quite flat; the other is of an orange outside, scarlet within, and the limb of the corolla bent back; the latter is not near so handsome as the former.—*Floricultural Cabinet.*

Art. VIII.—*Calls at Greenhouses in Boston and Vicinity.*

At the splendid establishment of J. P. Cushing, Esq. Belmont place, Watertown, in the large central apartment, we found a brilliant display of Oxalis, Roses, Primulas, Gillyflowers, Lachenalies, Pansies, Geraniums, and a variety of other showy flowers so agreeably intermingled, as to present a most enchanting appearance. The high, circular stage on the back side of the house is most tastefully

arranged, forming a complete mass of healthful foliage and flowers of various kinds.

The Orange and Lemon, with their golden fruits, Rhododendrons, Azaleas and Camellias, were prominent ornaments of this rich assemblage of plants. In this department, *Epacris grandiflora* and *Erica mederteana, ardens* and *speciosa* were in bloom. But one of the most shewy plants that first attracted our attention was a fine specimen of *Azalea Phœnecium*, completely covered with bloom. Among the numerous varieties and species of the Azalea, (or Rhododendron as it is now called) we think this one of the finest. A. indica stood by its side forming a fine contrast with its pure white flowers.

The pretty species of Camellia, *sangua rosa*, producing small blush flowers shaded with pink, is beautiful; a plant of this was in full bloom.

As we entered the next compartment, a large plant of *Solandria grandiflora*, was the first object to attract our attention. The plant is remarkable on account of the large size of its flowers, which are eight or nine inches in length, shaped like a goblet. When first expanded, the flowers are white with the interior of the cup striped with delicate purple; it afterwards changes to a pale yellow. It is a very rare plant; we have never seen it in any other collection, and believe it is not to be found in this region. It was named in honor of Daniel Solander, an English botanist of much merit. It is a native of Jamaica. It belongs to Pentandria Monogynia.—Nat. Ord. Solaneæ. Another elegant plant in flower, which should be in all collections was *Bletia Tankervilliæ*, belonging to the Orchideous tribe: of this there were a number of fine specimens: one in particular had two vigorous spikes of flower, about three feet high; on one of them we counted nineteen flowers. The lower division of the flower is brown, the upper white. It is a native of China. Its generic name is in honor of Luis Blet, a Spanish apothecary.

Bletia hyacinthina is a more delicate species with elegant purple flowers, a native of the same country as the other species; a fine plant of this was in flower. *Ornithogalum latifolium*, exhibited a spike of its pure white flowers. *Melostoma atromelia* is a beautiful plant with broad ovate five nerved hairy leaves. The flowers are of an exquisite bluish purple: it belongs to Decandria monogynia —

Melostomaceæ. One of the finest creeping plants which ornament the hothouse, we should judge is *Combretum purpureum*. We were shown a plant of this which had grown from a cutting in two years and a half from twenty to twentyfive feet in length: it has not been destitute of flowers for a year past. The flowers are disposed in beautiful branches, which are small but numerous, of a fine deep scarlet color. It is a native of Madagascar. Decandria Monogynia — Combreaceæ.

Plumbago capensis presented a very pretty appearance with its flexible branches trained to the wall. The flowers are disposed in umbels of a soft delicate blue.

Plumbago rosea, another pretty species, was also in bloom, with fine rose colored flowers. *Lantana cammara* is a curious plant, on account of its changeable flowers, which are produced in capitate umbels, changing from yellow to pink, and from that to purple; a plant of this was covered with bloom, which presented a great variety of tints. Didynamia Angiosperma — Verbenaceæ. A plant of *Ardisia crenata* was loaded with its fine red berries, and may be considered as a very ornamental shrub for the hothouse.

A gigantic plant of Crinum amabile was showing vigorous flower buds: from this plant was produced the magnificent specimens exhibited at the last annual exhibition of the Massachusetts Horticultural Society, by Mr Haggerston. It has bloomed once since that time. *Babiana cerulea* of the natural order Irideæ, and allied to Ixia, a very pretty plant with blue flowers, was in bloom.

We noticed a new and beautiful *Passiflora*, with fine, pinkish carmine flowers, but do not recollect the specific name. A large plant of *Passiflora alata* was covered with its shewy flowers. *Hibiscus sinensis plena*, and *H. lutea plena*, with a number of other varieties were in perfection. The single variety we think the most beautiful, although we suppose many would prefer the double varieties. It is said that hedges are made of this in some parts of China. From this specimen, we imagine a hedge of this plant must present a splendid appearance when in flower. Some of the Cactus tribe were in bloom; we noticed many varieties of this curious tribe. Among other pretty plants in flower, we observed *Roellia formosa*, *Ixora rosea*, *Vineas*, *Allamanda cathartica*, *Gloxinias*, *Ecrimacarpus*, with many other interesting plants. Mr Haggerston has raised a great number of seedling Amaryllis; a beautiful one resembling

vittata was in flower, and entitled to a name. A most magnificent plant of Amaryllis Johnsonia displayed its fine scarlet crimson flowers; two spikes from the same bulb, on which were thirteen flowers.

In the forcing department, the grapes were beginning to break, giving indications of a most vigorous growth. In large pots, there were some fine coiled vines in a more advanced state, showing a plentiful supply of clusters in embryo. The pine apple plants, of which there is a great number, were in a luxuriunt state; many of them will fruit the present year.

In rear of the hothouses, is a range of forcing pots ninety feet in length, in which vegetables of various sorts are grown. We saw here fine Cauliflowers, Lettuce, Cucumber vines well set with fruit, and other vegetables in different stages of growth; — Pots of strawberries on which was fruit of extra large size beginning to ripen. Here were also pots of grapes coiled according to Mearn's system, beginning to break.

At the Greenhouse of Marshall P. Wilder, Esq. Hawthorn Grove, Dorchester, we found the brilliant display of Camellias mentioned in our last, continued, though somewhat diminished in splendor. There were many beautiful varieties in bloom which have opened since that time, among which are the following.

Hallesia, pink striped. Conchata, very beautiful deep pink spotted or striped. Parks, rose striped; delicate pink shaded with white, slightly fragrant. Rosa sinensis. White Warratah. Rubricaulis; red spotted. Venosa; white shaded with rose. Scintilan; very fine deep red. Gloria mundi; red, blotched with white, superior to Chandlerii. Colvilli; beautifully variegated or spotted; superior if possible to punctata. Alba semiduplex; semidouble white. Cliviana. New English speciosa; deep crimson with white blotch: this is different from the speciosa described in the last number of the Register; that was the French speciosa. Roi de pas Bas, very dark, inclining to purple. New Imported; fine deep red, Conchiflora rosea, fine. Floyii, deep rose shaded with white; the foliage of this fine variety is remarkably large. Charlemange: pink with whitish edge. Intermedia; fine deep blush. Eximia, very deep red, and one of the most perfect shaped double flowers. Kentii. English Corolina; fine deep red. Lucida; dark red with white shades, foliage very glossy. Elegans; very large and fine; deep rose color, with

variegated centre. French Corolina: when expanding, has the appearance of a cabbage rose — fine variety.

The Camellias have recently been repotted, which of course would affect the beauty of the flowers, in some degree. We were, therefore surprised to see them look so well, especially as there has been a continual display for more than two months. A very beautiful plant of Azalea Phœnecia, covered with flowers in the most perfect state, showed to great advantage. *A. indica* and *A. hybrida* were also in flower. A. coccinea var. Smithii is a new and splendid variety with deep rose colored, or almost scarlet flowers, spotted with darker spots: flowers large, measuring three inches in diameter. Mr Wilder has another plant similar to this, which was received under a different name, but apparently the same.

In the stove, we found a splendid show of Amaryllis. Of this family, Mr W. informed us he had about 100 varieties. Some of the finest in bloom were A. bedonia, recurvifolia, platapetula, salubalis, ratinurva, vitilena, striataflora and Braziliensis: of all the Amaryllis, we think the variety platapetula the most perfect in shape. Ixia tricolor and Sparaxis grandiflora were displaying their interesting flowers. Some fine tree roses which had been forced, in this compartment, were opening their flower buds.

In the greenhouse we noticed among other shewy plants, a flower of the Pæony Banksiæ, which measured nine inches in diameter.

An extensive addition to this numerous collection is about being made, as the proprietor has recently received by the Switzerland, from Havre, a great assortment of rare plants: among them, one hundred and fifty varieties of hardy Azaleas; new Camellias, Rhododendrons, &c. If the Azaleas will stand our winters, they will be a very valuable acquisition to the shrubbery.

We have not seen a greenhouse with which we are more pleased, than that of Mr John Towne, No. 2, Snowhill street, Boston. This is a small house, but contains many rare and valuable plants: — among them more than forty species of Ericas, some of them qutie large, and all in a most luxuriant state of growth.

What can be more delightful, for those who have a taste for the cultivation of plants, when confined within the brick walls of the city, to have so pleasant a retreat from the cares of business, as a

small well stored greenhouse, separated from the drawing room by a glass door or window, through which is displayed the riches of Flora. What a source of innocent amusement and profitable instruction to the children of the family. Why is it that so much real enjoyment is neglected and passed over, for the anticipated and never-to-be-realized pleasure of retiring to some green spot to spend the remnant of life in floral or horticultural pursuits, when almost every one, who has the desire, may realize in some measure, even while engaged in the busy pursuits of the city, these elevating and satisfactory employments. We would recommend to those who delight in flowers, ("the smiles of our Heavenly Father," as Wilberforce styled them) who are about to erect a dwellinghouse, to add to it a small greenhouse, similar to Mr Towne's, as the expense will be but trifling; and as for fuel, an important item in the expenses of a greenhouse, here is none required, more than is necessary to heat the breakfast room under it, as it affords sufficient heat for the plants above.

The proprietor has displayed much taste in the training of many of his plants. He has about a dozen varieties of the finest Camellias, Rhododendrons, Azaleas of various sorts in bloom, a fine plant of Epacris grandiflora, covered with flowers, and most of the following were in bloom, viz. Erica pubescens, rubida and caffra, Diosma speciosa, Kennedia monophylla, Pimellia rosea, Coronilla glauca, Calothamnus quadrifolia, Sinus Brazillensis, Utuxica myrtifolia, Jasminum revoluta, Polygala attenuata, Corræa speciosa and many others. There was also a fine display of Hyacinths grown in bulb glasses. The Corræ speciosa is a beautiful and curiously constructed plant, a native of N. S. Wales, where it was discovered by Sir Jos. Banks and Dr Solander. The flowers are remarkable for the distinct lines that bound the colors, giving them an artificial appearance: they are tubular, similar to the scarlet monthly honeysuckle, of different shades of pink and scarlet, about one third of the upper section of the tube is a bluish green. It is an interesting orkament of the greenhouse for three or four months of the winter season. The genus was named in honor of the late Abbe Correa, the Portuguese minister to the United States, a gentleman attached to Botany.

J. B.

Art. IX.—*Miscellaneous Articles.*

Medicinal Properties of the Tomato.—Of the hygienic, or healthful properties of the tomato, Prof. Rafinesque says,—"It is everywhere deemed a very healthy vegetable, and an invaluable article for food."

Prof. Dickson writes,—"I think it more wholesome than any other acid sauce."

Robley Dunglison, M. D., late Professor in the University of Virginia, and now of the University of Maryland, says,—"It may be looked upon as one of the most wholesome and valuable esculents that belong to the vegetable kingdom."

Many other like authorities might be quoted in proof of its hygienic powers, but I consider it unnecessary; I will only add that I am led to wonder at the folly and infatuation of many of my professional brethren, in carrying forward the sword of devastation against the health and happiness of the human family, in the support of deleterious substances, to the utter exclusion of this article, whose salutary and benign influences upon all who use it, are so apparent and perspicuous that the most ordinary observer can but appreciate them, as well as the most scientific practitioner of the healing art; but I choose to tread the rugged path of duty in placing its virtues before an intellectual and reading community — my fellow citizens. For acts of this kind, according to Virgil, we may even claim the best delights of Elysium; for he says they "were showered upon those who received wounds for their country, who lived unspotted priests, who uttered verses worthy of Apollo, or who, like Very, consecrated their lives to the useful arts."

Mr Thomas writes me — "I have no positive evidence within my own experience of its medical properties, though the sauce is very grateful to persons recovering from fever. The late Doctor H. G. Spofford says,—'I often find myself incommoded and my health impaired by inaction of the stomach and bowels. This is always in some degree accompanied with a sense of straitness of the chest; and besides a general uneasiness and lassitude, with head-ache and some degree of pain in the region of the liver. The appetite becomes imperfect, with a peculiar taste of the mouth as if something was wanting. The tomato at once removes the taste of the mouth; in a little time quickens the action of the liver and

bowels, and removes all those symptoms and feelings. It seems to me that of all articles of diet or medicine that have come to my knowledge, the tomato acts most directly upon the liver. Several other persons of my acquaintance have derived similar benefits from its use. It has saved me from the necessity of using cathartics."

Prof. Rafinesque says, —" As a medical article for the liver, etc., it is a new fact, unknown even in Europe and India."

The Indians use it as a diuretic, and to expel concretions from the kidneys. E. B. Barton, M. D., Professor of the Medical College of Louisiana, writes me under date —

New Orleans, Nov. 28, 1835.

" I have read your publication on this subject (the tomato) with great interest, and if subsequent experience shall sustain your position of its having a specific influence on the liver and being a substitute for calomel, you will confer lasting benefit upon your country, and erect an enduring monument to your own reptuation. In it I most cordially wish you success, both as a philanthropist and an American — and I feelingly do it after having, for 16 years, witnessed the horrible ravages committed by calomel."

I have used with decided advantage in a variety of complaints, and hope to be able to exhibit its remedial powers in so lucid a manner that all attempts at refutation will prove illusory and vapid. I shall consider its medicinal agency as applicable to special cases under separate heads.

DYSPEPSIA (INDIGESTION.)

In a public lecture, introductory to my course in the Willoughby University of Lake Erie, in the fall of 1834, I stated that the tomato, when used as an article of diet, was almost a sovereign remedy for dyspepsia or indigestion: and from subsequent experience I am more fully confirmed in the opinion. The tomato effects a cure in dyspeptic cases —

1st. By its power of solution. Since my appointment in the University of Bellevue Hospital, I have received testimony of an indubitable character, that the tomato possesses, in an eminent degree, the power of dissolving the food in the stomach, and thus supplying the place of the gastric juice, when there is a deficiency in the secretion of that fluid, (and there usually is in such cases,) either in quality or quantity; and that it is, undoubtedly, out of the body, in the same temperature, a most powerful solvent. — *Dr Cook's Treatise.*

QUINCY MARKET.

(Reported for the Horticultural Register.)

APPLES, Baldwins	barrel	2 00	2 25
Greenings,	"	2 00	2 25
Russetts,	"	2 00	
Bell flowers	"	2 50	
PEARS, Iron,	bushel	3 00	
CATHARINE,	"	3 00	
CRANBERRIES,	"	8 00	8 50
CHESNUTS,	"	3 00	3 50
CAULIFLOWERS,	head	37	75
CELERY, White Solid, and Rose Colored,	root	12	25
CABBAGE, Red Dutch,	dozen	50	62
Green Globe Savoy,	"	62	75
Large Drumhead,	"	50	75
HORSE RADISH,	pound	10	12
RADISHES, Early,	bunch	12	
Turnip Rooted,	"	12	17
LETTUCE ROSE or Tennisball,	head	6	8
POTATOES, Chenangoes,	bushel	75	1 00
Eastport,	"	75	1 00
St Helena,	"	1 00	1 25
SQUASHES, Crook neck,	pound	9	10
Valparaiso,	"	5	6
SHAGBARKS,	barrel	4 00	4 25
ONIONS, White Portugal,	bushel	1 00	1 25
Red,	"	1 00	1 25
Bunch Onions,	hundred	4 00	4 25
PICKLED CUCUMBERS,	gallon	31	37
DRIED APPLES,	pound	4	5
LONG BLOOD BEETS,	bushel	1 00	
PARSNEPS, Large Dutch,	"	75	1 00
TURNIPS, White Flat	"	50	
Ruta Baga	"	50	
Long Yellow French,	"	50	

Boston, Feb. 23, 1837.